

WHAT IS CLAIMED IS:

1. An internal voltage generator comprising:

a reference voltage divider for generating first and second reference voltages;

5 a first differential amplifier for receiving the first reference voltage from the reference voltage divider through a first input terminal of the first differential amplifier and for generating a first differential signal;

a second differential amplifier for receiving the second  
10 reference voltage from the reference voltage divider through a first input terminal of the second differential amplifier and for generating a second differential signal; and

a driver being driven by the first and second differential signals from the first and second differential  
15 amplifiers, respectively, and

wherein an output signal of the driver is used as an internal voltage of a semiconductor device, and is applied to second input terminals of the first and second differential amplifiers, respectively to provide a feedback loop, thereby  
20 maintaining the driver output signal within a predetermined target range of voltages.

2. An internal voltage generator as claimed in claim 1, wherein the first reference voltage is less than the second

reference voltage.

3. An internal voltage generator as claimed in claim 1,  
wherein the voltage of the output signal of the driver has a  
5 magnitude greater than the first reference voltage and less  
than the second reference voltage.

4. An internal voltage generator as claimed in claim 1,  
wherein the driver includes a PMOS transistor and an NMOS  
10 transistor which are connected to each other in series, and the  
first and second differential signals are applied to gates of  
the PMOS transistor and the NMOS transistor, respectively.

5. An internal voltage generator as claimed in claim 4,  
15 wherein the output signal of the driver is outputted through  
a middle node between the PMOS transistor and the NMOS  
transistor.

6. An internal voltage generator as claimed in claim 1,  
20 wherein the semiconductor device generates a second internal  
voltage other than the internal voltage of the semiconductor  
device, and the a second internal voltage is used for  
providing a power supply voltage of the reference voltage  
divider.

7. An internal voltage generator comprising:

a reference voltage divider for generating first and second reference voltages;

a first differential amplifier for receiving the first  
5 reference voltage from the reference voltage divider through  
a first input terminal of the first differential amplifier  
and for generating a first differential signal;

a second differential amplifier for receiving the second  
reference voltage from the reference voltage divider through  
10 a first input terminal of the second differential amplifier  
and for generating a second differential signal;

a driver being driven by the first differential signal  
received from the first differential amplifier to maintain  
the voltage level of a driver output signal above the first  
15 reference voltage received from the reference voltage  
divider; and

the driver being driven by the second differential  
signal received from the second differential amplifier to  
maintain the voltage level of a driver output signal below  
20 the second reference voltage received from the reference  
voltage divider,

wherein an output signal of the driver is used as an  
internal voltage of a semiconductor device, and is applied to  
second input terminals of the first and second differential

amplifiers, respectively to provide a feedback loop, thereby maintaining the driver output signal within a predetermined target range of voltages defined by the first and second reference voltages.

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8. An internal voltage generator as claimed in claim 7, wherein the reference voltage divider further comprises a plurality of resistors connected in series between a core voltage and a ground voltage, and the nodes through which the  
10 first and second reference voltages are outputted are disposed on opposite sides of at least one resistor.

9. An internal voltage generator as claimed in claim 7, wherein the reference voltage divider further comprises a  
15 reference regulator.